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VI. *An Account of the Effects of Lightning on a large Rock in Gloucester. In a Letter from the Rev. ELI FORBES, to the Rev. MANASSEH CUTLER, F. A. A.*

Gloucester, July 3, 1783.

REVEREND SIR,

ON the 18th of March, 1782, we had a most severe clap of thunder, and its effects were most surprising. A large rock, of the contents of near ten feet square above ground, received the full weight of its shock. It struck the rock near the top, and made an impression like that of a cannon-ball. It broke off near twenty pounds of the solid stone, and cracked the remaining body in several directions, though not very deep. Then it ran down on the western side of the rock in three directions, or main branches,—each branch marking its path with a chalky colour, tinged with blue. The lightning so penetrated the solid stone, as to alter the texture of its parts, and change its colour an inch deep ; which still remains on a large piece of the rock now by me. When these three branches reached the ground, they took different routs.—One, that seemed to contain the greatest quantity of the fluid, took its course northward, rending the ground, and throwing up cart-loads of earth when it met with large rocks. Some large rocks, whose surfaces were nearly on a plain with the earth, it passed over, with only marking its path, about an inch and an half wide, with the same colour as on the rock it struck first : then it entered the ground, and tore up the turf about an inch deep. At a rock in its way, which rose some inches above-ground, it divided itself into two equal branches, turning up the turf from
the

the basis of the rock, till they met on the opposite side, and passed much the same course, till it came to another rock, not quite so high, nor of so wide a base. At this rock it entered the ground, and raised it from its bed about three inches, tho' it was of several tons weight ; which was the last effects I could discover of it.

The second main branch, which seemed to contain the next greatest quantity, took its rout westward by a stone wall ; on the north side of which was a bank of snow, about six inches deep, and which was now in a watery state. It followed this wall under the snow, rending and removing some of the foundation-stones, and undermining others. Though it passed chiefly on the north side of the wall, under the snow, yet it was not confined to that side ; for it crossed under it several times, before it got to the distance of fifty yards. Then it divided itself into two branches ; and one turned off southward, across a piece of grass-land, a little descending towards the south, about two rods ; which brought it upon a plain, or level, with the ridge of a barn, which stood on a beach near the sea-side, about fifty rods distant from the above-said grass-plot. It entered at the west end, just below the peak,—passed on the under side of the ridge-pole to a king-post, where it again divided into two branches ; one ran down the post like an engraver's tool, within four feet of the ground, where about one third part of the post was hewed off ; and on the opposite side was a spike, which was just entered into the wood, and stood horizontal :—it passed round the post to the head of the spike ;—passed over the head,—drilled a small hole,—returned along the spike to the post, and then, splintering it, continued its course to the ground, and no further traces appeared. The other branch continued its course

on the ridge-pole to the end ;—ran down a principal to a corner post, which it pushed down, rending the board which covered it. In its way to the ground it left the post, and passed over two iron bolts that hung a gate to the post, leaving a frosted tract on them ;—returned to the post again, and continued to the bottom, which rested on a flat stone ; and then passed across the beach, about six or eight rods, throwing up the ground and pebble-stones, till it came to the water's edge ; and no further effects could be seen. The other branch, at the wall, continued its course by it, producing similar effects as before it divided, until it came near a pond of water, when it entered the ground, and broke out near the water's edge, making a small hole, and could be traced no further.

The third main branch, at the rock first struck, bent its course eastward. In some places it plowed deep furrows in the earth,—throwing up large quantities of earth and stones, and threw some stones, of twenty pounds weight, to the distance of four rods. In other places, it only marked its path as a lambent flame, without removing the lightest bodies that lay in its way, continuing its course to a small collection of water, and there ceased.

A number of persons, within the circle of two hundred yards, very sensibly felt the shock. Those that were abroad were thrown to the ground, and remained senseless some minutes : those that were in the adjacent houses, felt an effect, or shock, like that of electricity ; by which some parts of the body suffered more than others. A young woman, who was leaning with her elbow against a jamb of a chimney, felt it struck numb, and remained so for some hours ; and, when it began to recover, it was in very great pain. Another woman was sitting with
her

her feet upon a hearth, who felt a violent shock across her legs ; and her feet and about half way of her legs remained insensible for some time.

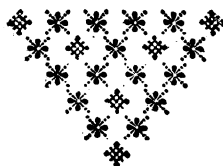
Thus, Sir, I have given you the particulars of the surprising operations of the lightning ; and you may depend on all that I have related to be fact, as I critically examined the whole the next day, and made minutes of the same, while on the spot : And you may communicate as much of it as you please to your learned Society.

I am, Sir, &c.

E L I F O R B E S.

Rev. Mr. Cutler.

N. B. I have enclosed an imperfect sketch, [Plate III. Fig. 3.] which may assist you in forming your ideas of the various courses of the lightning.



Back view of Loc. Shippens House

Fig. I

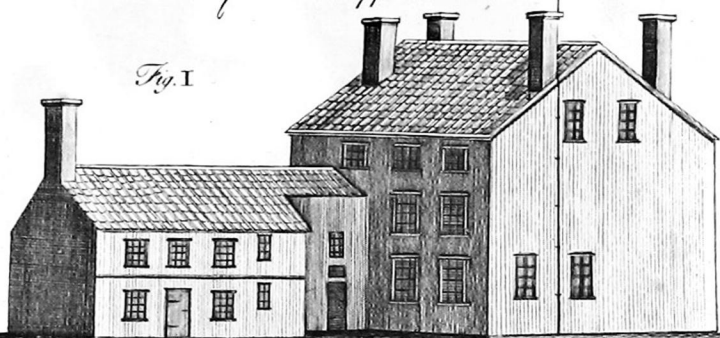
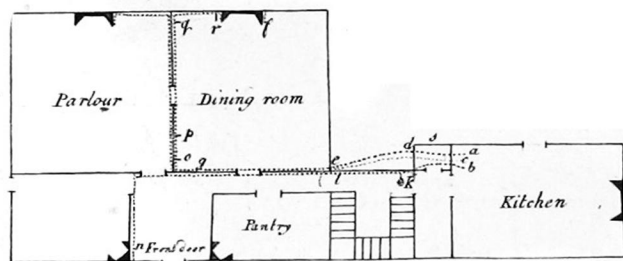


Fig. II



A



B



C



D



E



Plate 3

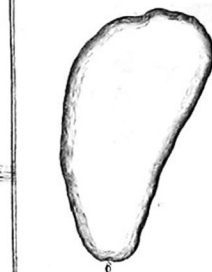
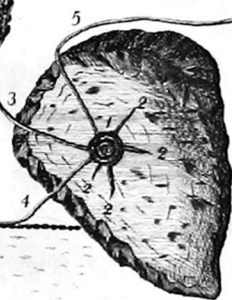


Fig. III

- Rock raised up 3 inc.
- Rock passed round
- Rock passed over



Stone thrown 4 rods
of 20 w.

- 1 The place struck
- 2 The cracks in the rock
- 3 The main branch
- 4 The second main branch
- 5 The third main branch

